

REMARKS

Claims 1, 4-9, 12-17, and 19-21 were pending in this application.

Claims 17, 19, and 20 have been allowed.

Claims 1, 5, 9, 13, and 21 have been rejected.

Claims 4, 6-8, 12, and 14-16 have been objected to.

Claims 8 and 16 have been amended as shown above.

Claims 22-25 have been added.

Claims 1, 4-9, 12-17, and 19-25 are now pending in this application.

Reconsideration and full allowance of Claims 1, 4-9, 12-17, and 19-25 are respectfully requested.

I. ALLOWABLE CLAIMS

The Applicants thank the Examiner for the indication that Claims 17, 19, and 20 are allowable. These claims have not been amended and therefore remain in condition for allowance.

The Applicants also thank the Examiner for the indication that Claims 4, 6-8, 12, and 14-16 would be allowable if rewritten in independent form to incorporate the elements of their respective base claims and any intervening claims. Because the Applicants believe that the remaining claims in this application are allowable, the Applicants have not rewritten Claims 4, 6-8, 12, and 14-16 in independent form.

II. REJECTION UNDER 35 U.S.C. § 103

The Office Action rejects Claims 1, 5, and 21 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,580,705 to Riazi et al. (“*Riazi*”) in view of U.S. Patent No. 5,521,908 to Younce et al. (“*Younce*”). The Office Action rejects Claims 9 and 13 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,289,063 to Duxbury (“*Duxbury*”) in view of *Riazi* and *Younce*. The Applicants respectfully traverse these rejections.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. (*MPEP* § 2142; *In re Fritch*, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992)). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent Office. (*MPEP* § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984)). Only when a *prima facie* case of obviousness is established does the burden shift to the Applicant to produce evidence of nonobviousness. (*MPEP* § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993)). If the Patent Office does not produce a *prima facie* case of unpatentability, then without more the Applicant is entitled to grant of a patent. (*In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Grabiak*, 769 F.2d 729, 733, 226 U.S.P.Q. 870, 873 (Fed. Cir. 1985)).

A *prima facie* case of obviousness is established when the teachings of the prior art itself suggest the claimed subject matter to a person of ordinary skill in the art. (*In re Bell*, 991 F.2d

781, 783, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993)). To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on the Applicant's disclosure. (MPEP § 2142).

Regarding Claims 1 and 9, the Office Action acknowledges that *Riazi* fails to disclose a "known symbol distribution controller" that is capable of "determining a channel order" associated with a receiver and that "determines [an] optimum distribution [for inserting a plurality of known symbol clusters into an outgoing stream of unknown symbols] according to a value of the channel order." (Office Action, Page 2, Last paragraph – Page 3, First paragraph; Page 5, Second paragraph). The Office Action then asserts that *Younce* discloses these elements of Claims 1 and 9 and that it would be obvious to combine *Riazi* and *Younce* (regarding Claim 1) and to combine *Duxbury*, *Riazi*, and *Younce* (regarding Claim 9). (Office Action, Page 3, Second and third paragraphs; Page 5, Third and fourth paragraphs).

Younce recites a data communication system that includes a multicarrier transmitter and a multicarrier receiver. (Abstract). The transmitter encodes and modulates data into a plurality of carriers, and the data is received by the multicarrier receiver and processed using an SIRF. (Col. 3, Lines 7-14). The multicarrier receiver approximates a "channel impulse response" and an

“echo impulse response” and then uses these impulse responses to identify SIRF coefficients. (*Col. 3, Lines 14-30*). Models of the impulse responses could also be used to identify the SIRF coefficients. (*Col. 5, Lines 4-14*).

First, *Younce* simply recites a device that uses an approximation of an “impulse response” of a channel to adjust an “SRIF.” The Office Action does not explain how the approximated “channel impulse response” discloses, teaches, or suggests a “channel order.” While *Younce* does refer to a “length” of the “channel impulse response” (*Col. 1, Lines 19-21*), the Office Action does not explain how the “channel impulse response” of *Younce* represents a “channel order” as recited in Claims 1 and 9.

Second, the Office Action has not shown that *Younce* uses the approximated “channel impulse response” to determine an “optimum distribution” for inserting a plurality of known symbol clusters into an outgoing stream of unknown symbols. *Younce* simply recites that distortions of the transmitted data are minimized using the SIRF. *Younce* lacks any mention that the SIRF determines an “optimum distribution” for inserting a plurality of known symbol clusters into an outgoing stream of unknown symbols. At most, *Younce* describes a prior patent that recites the use of a training sequence. (*Col. 2, Lines 15-31*). However, *Younce* lacks any mention of determining an “optimum distribution” for inserting a plurality of known symbol clusters into an outgoing stream of unknown symbols “according to a value of the channel order” as recited in Claims 1 and 9.

For these reasons, the Office Action does not establish a *prima facie* case of obviousness regarding Claims 1 and 9 (and their dependent claims). Accordingly, the Applicants respectfully

request withdrawal of the § 103 rejection and full allowance of Claims 1, 5, 9, 13, and 21.

III. NEW CLAIMS

The Applicants have added new Claims 22-25. The Applicants respectfully submit that no new matter has been added. At a minimum, the Applicants respectfully submit that Claims 22-25 are patentable for the reasons discussed above. The Applicants respectfully request entry and full allowance of Claims 22-25.

IV. CONCLUSION

The Applicants respectfully assert that all pending claims in the application are in condition for allowance and respectfully request an early allowance of such claims.

SUMMARY

If any issues arise, or if the Examiner has any suggestions for expediting allowance of this application, the Applicants respectfully invite the Examiner to contact the undersigned at the telephone number indicated below or at *wmunck@davismunck.com*.

The Commissioner is hereby authorized to charge any fees connected with this communication (including any extension of time fees) or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

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Date: _____

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